

CendR element, an accessory molecule, and a co-composition, wherein the CendR element and the co-composition are not covalently coupled or non-covalently associated with each other, wherein the CendR element and the accessory molecule are covalently coupled or non-covalently associated with each other. In these compositions, the accessory peptide can overlap with the CendR element or be separate from the CendR element.

[0012] Examples of useful accessory molecules include homing molecules, targeting molecules, affinity ligands, cell penetrating molecules, endosomal escape molecules, sub-cellular targeting molecules, nuclear targeting molecules. Different accessory molecules can have similar or different functions from each other. Accessory molecules having similar functions, different functions, or both, can be associated with a CendR element, CendR composition, CendR conjugate, CendR molecule, CendR compound, CendR protein, and/or CendR peptide.

[0013] Also disclosed are compositions comprising a protein or peptide and a co-composition, wherein the protein or peptide comprises a CendR element and a homing peptide, wherein the CendR element and the co-composition are not covalently coupled or non-covalently associated with each other. Also disclosed are compositions comprising a protein or peptide and a co-composition, wherein the protein or peptide comprises an amino acid sequence, wherein the amino acid sequence comprises a CendR element and a homing peptide, wherein the CendR element and the co-composition are not covalently coupled or non-covalently associated with each other. Also disclosed are compositions comprising a CendR element, a homing molecule, and a co-composition, wherein the CendR element and the co-composition are not covalently coupled or non-covalently associated with each other, wherein the CendR element and the homing molecule are covalently coupled or non-covalently associated with each other. In these compositions, the homing peptide can overlap with the CendR element or be separate from the CendR element.

[0014] Also disclosed are methods of enhancing internalization, penetration, or both of a cargo composition into or through a cell, tissue, or both, the method comprising: exposing the cell, tissue, or both to a CendR element and the cargo composition, thereby enhancing internalization, penetration, or both of the cargo composition into or through the cell, tissue, or both, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other.

[0015] Also disclosed are methods of enhancing internalization of a cargo composition into a cell, the method comprising: exposing the cell to a CendR element and the cargo composition, thereby enhancing internalization of the cargo composition into the cell, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other.

[0016] Disclosed are methods of enhancing penetration of a cargo composition into and through a tissue, the method comprising: exposing the tissue to a CendR element and the cargo composition, thereby enhancing penetration of the cargo composition into and through the tissue, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other.

[0017] Also disclosed are compositions comprising a CendR element and a cargo composition, wherein the CendR element and the cargo composition are covalently

coupled or non-covalently associated with each other. Also disclosed are compositions comprising a protein or peptide and a cargo composition, wherein the protein or peptide comprises a CendR element and an accessory peptide, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other. Also disclosed are compositions comprising a protein or peptide and a cargo composition, wherein the protein or peptide comprises an amino acid sequence, wherein the amino acid sequence comprises a CendR element and an accessory peptide, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other. Also disclosed are compositions comprising a CendR element, an accessory molecule, and a cargo composition, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other, wherein the CendR element and the accessory molecule are covalently coupled or non-covalently associated with each other. In these compositions, the accessory peptide can overlap with the CendR element or be separate from the CendR element.

[0018] Also disclosed are compositions comprising a protein or peptide and a cargo composition, wherein the protein or peptide comprises a CendR element and a homing peptide, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other. Also disclosed are compositions comprising a protein or peptide and a cargo composition, wherein the protein or peptide comprises an amino acid sequence, wherein the amino acid sequence comprises a CendR element and a homing peptide, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other. Also disclosed are compositions comprising a CendR element, a homing molecule, and a cargo composition, wherein the CendR element and the cargo composition are covalently coupled or non-covalently associated with each other, wherein the CendR element and the homing molecule are covalently coupled or non-covalently associated with each other. In these compositions, the homing peptide can overlap with the CendR element or be separate from the CendR element.

[0019] In some forms, the CendR element is a type 1 CendR element. In some forms, the CendR element is a type 2 CendR element. In some forms, the CendR element is not a type 1 CendR element. In some forms, the CendR element is not a type 2 CendR element. In some forms, the CendR element is a type 1 CendR element and not a type 2 CendR element. In some forms, the CendR element is a type 2 CendR element and not a type 1 CendR element. In some forms, the CendR element is a type 1 CendR element or a type 2 CendR element.

[0020] The CendR element can permeabilize the cell, tissue, or both. The cell, tissue, or both can be in a subject. The cell, tissue, or both can be exposed to the CendR element and the co-composition by administering the CendR element and the co-composition to the subject. The CendR element and the co-composition can be administered to the subject simultaneously. The CendR element and the co-composition can be administered to the subject in a single composition comprising the CendR element and the co-composition. The CendR element and the co-composition can be administered to the subject in separate compositions. The CendR element and the co-composition can be administered to the subject at different times. The CendR element